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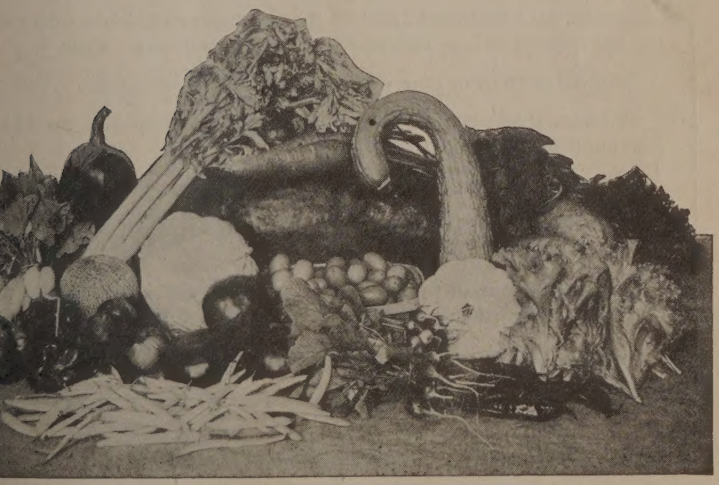
B. W. KILGORE, DIRECTOR

RALEIGH

THE FARM GARDEN



RIBUTED IN FURTHERANCE OF THE ACTS OF CONGRESS OF MAY 8 AND JUNE 30, 1914

DIGEST

THE FARM GARDEN has not received the attention from Nor Carolina farmers that its importance warrants. **Page 3.**

THE GARDEN will generally receive more attention if locat near the farm home. **Page 4.**

THE IDEAL garden soil is a deep, mellow, well drained loam high fertility and retentive of moisture. **Page 4.**

THE GARDEN plot should be located where it will receive least five hours of sunlight each day. **Page 5.**

DO NOT make the garden so large that it will fail for want attention. **Page 6.**

MAKE A PLAN of the garden on paper before planting. **Page**

GOOD DRAINAGE is necessary for a successful garden. **Page**

CAREFUL PREPARATION of the soil has much to do with ma ing subsequent tillage operations easy and pleasant. **Page 9.**

THE ADDITION of lime will improve many garden soils. **Page 1**

STABLE MANURE not only adds fertility but improves the phy cal condition of the soil. **Page 11.**

GREEN MANURE crops are likewise valuable. **Page 11.**

COMMERCIAL FERTILIZERS can be used to an advantage nearly all gardens. **Page 12.**

TILLAGE is one of the most important factors in determining t success of the garden. It must be thorough and timely. **Page 13.**

GOOD TOOLS are helpful in caring for the garden. **Page 15.**

THE FARM GARDEN

. D. MATTHEWS, *State Horticulturist*, and L. H. NELSON, *Assistant Horticulturist*

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IMPORTANCE OF THE FARM GARDEN

e farm garden in the South has not received the attention from southern ers that its importance warrants. It has been said that the farm garden e most neglected phase of southern agriculture. It is only too true that farmers in North Carolina do not have gardens worthy of the name, for, any instances, the farm garden is little more than a collard patch. How- during the period of the war vegetable growing received a decided impetus many farmers learned for the first time the value of a well-planned garden. regions where cotton is the principal crop, a well-kept garden is the ex- on rather than the rule, and even in sections where commercial vege- production is conducted there is a scarcity of fresh vegetables during ge part of the year.

e economic importance of the farm garden was never greater than at nt. High freight rates are causing fresh vegetables to sell beyond the n of many and are often making it unprofitable to ship away from the e of production. The farmer who buys vegetables is not only paying the of production, but is also paying the cost of transportation and market- Not only is it possible to reduce the cost of the family's food supply by f the farm garden, but the convenience of having a supply of fresh vege- s always available cannot be measured in dollars and cents. Many types getables lose their characteristic flavor when not used within a few hours gathering, but can always be had in ideal condition if grown on the . In many localities the only means of securing fresh vegetables is gh local gardens.

fferent estimates of the money value of farm gardens have been made for ral sections of the country, and they vary greatly. The value of the aver- farm garden in North Carolina in 1919 was $70.26, according to the Four- h Census. Every type of farm garden, even those which were no more collard patches, was included in this census. At the Illinois Agricul- l Experiment Station, a half-acre garden yielded, during five years, products h $105 a year, on the average. Truck farmers in the eastern part of state frequently sell from $100 to $300 worth of vegetables per acre. is not possible to make an accurate estimate of the value of the better s of gardens, but from careful observation, it can be safely said that a -kept garden will yield a return five to fifteen times greater than would

the same area devoted to general farm crops. The half-acre garden pl
telligently handled, will produce vegetables which would cost from $
even $200 if purchased on the market.

Recent discoveries in the field of human nutrition have shown the in
ance and absolute necessity of fresh leafy vegetables in the diet and
caused a general realization of the value of fresh vegetables as food.
vegetables, in too many cases, make up a very small part of the diet
family of the North Carolina farmer.

The farm garden will pay abundantly for the time and attention appl
it, if the gardener gives it timely care and directs his efforts intellig
The garden should be conducted with the aim to supply the housewife w
abundance and variety of fresh vegetables during a greater part of the
Lack of success is more frequently due to neglect or the lack of knowle
garden practices. This circular is one of a series written to supply inf
tion on gardening with the hope that it will be of value in increasing the
ber and quality of farm gardens in North Carolina.

LOCATION OF THE GARDEN

As a general rule, the vegetable garden should be located near the
home. In individual cases there may be ample reason for locating the g
some distance from the house, but as the work of caring for the gar
usually done at odd times, it is more convenient to have it near the
Many opportunities for a few minutes work are lost to the distant garde
it is almost certain to be neglected. Too, in the nearby garden, the vege
are more easily available to the housewife.

In selecting the garden plot, see that sunshine, moisture, and good dra
are supplied. Good drainage is of primary importance. The land shou
so situated that surplus water can drain away during heavy rains, bu
slope should not be great enough to allow the soil to wash. The surface
garden should not contain depressions in which water will accumula
stand. Waste water from surrounding land should not flow toward the
The plot should not be located along the banks of a creek or stream tha
be liable to overflow during the growing season.

A slope to the south or southeast is usually preferable, because her
soil warms up early in the spring, which permits early planting and s
lates the early growth of crops. It is an advantage to have protectio
the north and northwest to break the force of the wind. Either a hi
buildings, or a group of trees, provided they are far enough removed, so
their roots will not interfere with the garden space, are valuable in this
nection.

It is important to locate the garden so that horse cultivation can be
A good fence around the plot is almost indispensable. It should be a safe
against all farm animals, including poultry, and should be close enou
prevent the entrance of rabbits.

GARDEN SOILS

The farm gardener has a decided advantage over the city gardener, in
he usually has an opportunity to exercise some choice in selecting the so
the garden. On many farms, there are different soil types, some of whic
more adapted to vegetable growing than others.

ideal garden soil is a deep, mellow, well-drained loam of high fertility tentive of moisture. A mellow, well-drained condition is one of the im- nt essentials of successful gardening. Such a soil may be worked early spring, it drains quickly and may be worked soon after a rain and it not bake. Soil of this description works with such ease that much of the ery of tillage is relieved and the pleasure of gardening increased.
dy and loamy soils dry out earlier in the spring, are warmer, more worked, and produce earlier crops than do the heavier types. However,

FIG. 1—Locate the farm garden near the home.

tables can be grown on almost any type of soil, provided the land is well ared and supplied with a sufficient amount of available plant food, and ne should be discouraged because he does not have the ideal type.
hile nearly all soils can be modified, it is advisable to avoid stiff clays, ex- vely rocky or gravelly soils, and poorly drained soils.

IMPORTANCE OF SUNLIGHT

is nearly always a waste of effort to garden in competition with shade . Hoeing, watering, and fertilizing cannot make up for lack of sun- although many gardeners try to make them do so and fail. Careful con- ration should be given to the number of hours a day any part of the pros- ve garden space is shaded. As a rule, foliage crops, such as lettuce, kale spinach, do fairly well in partial shade, but must have a minimum of 2 hours of sunlight a day. Plants that ripen fruits, like the tomato, ld have a minimum of five hours of sunlight each day.

SIZE OF THE GARDEN

The size of the garden will be influenced by the size of the family, an amount of labor available to work the plot. The judgment and past ence of the gardener should be used to determine the size of the gar dertaking. No more land should be planted than can be given car tention. A smaller area properly attended will produce much more larger garden that has been neglected. Many gardeners make the mis attempting to utilize too large an area. If the garden is too large, the siasm of early spring will disappear under the summer sun. It is muc to begin on a small scale and let experience point the way than to secu ure through attempting too much.

Practice intensive methods, and the production will be increased the size of the garden may be reduced and the amount of labor lesse one-fourth acre plot, systematically cropped, can be made to produce vegetables to supply a family of six. Where land is available, it is mended that the garden be made large enough to allow part of the pl planted for growing a winter supply of sweet and Irish potatoes, and fo to be set aside to be planted in a soil improving crop each year.

By referring to the Farm and Home Garden Manual, definite suggest garding the productivity of different vegetables are available that wi value to the prospective gardener in estimating the size of the gard what he should plant to supply his table.

THE GARDEN PLAN AND ARRANGEMENT

A few hours spent in the careful, conscientious preparation of a sys garden plan is without question the most necessary and profitable expe of time that the gardener will make. It is as futile to expect the most aging results without it as it is to expect the satisfactory constructi building without a plan. With it objects are clearly defined instead befogged. Great economy of time, energy and materials is achieved mistakes are made, better yields of vegetables in quantity, quality and realized than would be probable otherwise.

The garden plan, prepared on paper before the active gardening sea gins, constitutes a valuable guide and record of operations for the seas with modifications from year to year. A systematic plan, carefully f in practice, makes for the maximum yield of vegetables from the gard The accompanying diagram (Fig. 2) is meant to illustrate a garden arrangement, including the grouping of plantings, planting di and dates, succession crops, etc., that has generally proved advantageou arrangement is only suggestive, of course, and may be modified to fit stances.

For the farm garden, the long, narrow plot is usually preferable reason that horse cultivation will be the rule. Distances between rows greater than where hand tools and implements are employed thro Vegetables should be grouped according to their cultural requirements, into account length of season, habit of growth and similarity of tre Thus root crops would be planted along one side of the garden; lar

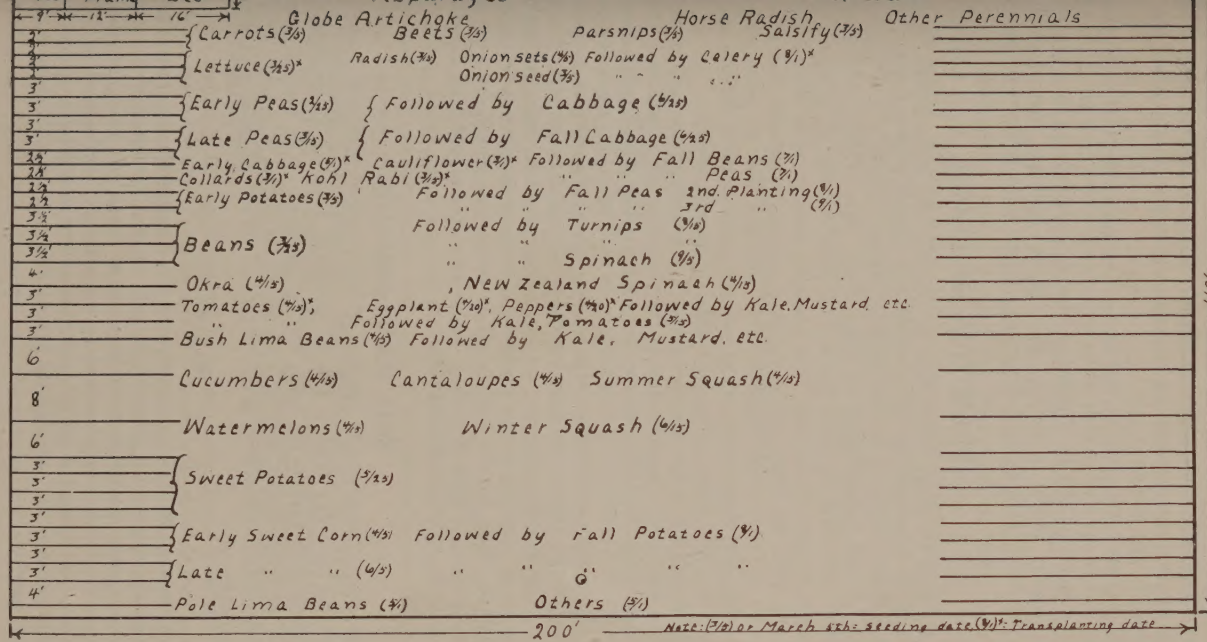
9' 12' 16'
Globe Artichoke
Beets (3/5)
Horse Radish
Other Perennials
Carrots (3/5)
Parsnips (3/5)
Salsify (3/5)
Lettuce (3/25)*
Radish (3/4)
Onion sets (3/5) Followed by Celery (3/1)*
Onion seed (3/5) " " " "
Early Peas (3/25)
Followed by Cabbage (3/25)
Late Peas (3/5)
Followed by Fall Cabbage (3/25)
Early Cabbage (3/1)*
Cauliflower (3/1)* Followed by Fall Beans (3/1)
Collards (3/1)* Kohl Rabi (3/2)*
" " " Peas (3/1)
Early Potatoes (3/5)
Followed by Fall Peas 2nd. Planting (3/1)
" " " 3rd " (3/1)
Followed by Turnips (3/8)
Beans (3/25)
" " Spinach (3/5)
Okra (4/5)
, New Zealand Spinach (4/3)
Tomatoes (3/5)*,
Eggplant (3/10)*, Peppers (3/10)* Followed by Kale, Mustard etc.
" " Followed by Kale, Tomatoes (3/5)
Bush Lima Beans (3/5) Followed by Kale, Mustard, etc.
Cucumbers (4/5)
Cantaloupes (4/5)
Summer Squash (4/5)
Watermelons (4/5)
Winter Squash (6/5)
Sweet Potatoes (3/25)
Early Sweet Corn (4/5)
Followed by Fall Potatoes (3/1)
Late " " (6/5) " " " " "
Pole Lima Beans (4/1)
Others (3/1)
200'
110'
Note: (3/2) or March 8th = seeding date (3/1)* = Transplanting date

FIG. 2—Suggested plan for the farm garden.

crops such as cabbage next and toward the center; then tomatoes, eggp okra and the like and finally the tall growing crops on the other side. perennial crops, as rhubarb and asparagus, should be placed along the b as shown in the sketch.

Such adjuncts and aids to earliness as hotbeds and coldframes shoul located out of the way of cultivation in the area which includes the perenn

If the vegetable plot is of sufficient size, a winter supply of both sweet Irish potatoes should be grown. In a garden with an area of one-hal acre, one-eighth acre each of these two storage crops will not be excessi

SELECTION OF CROPS

In selecting the crops which shall be grown in the farm garden, choice naturally be influenced by the preference of members of the family for tain vegetables, often to the exclusion of others. While it is advisable guided by such consideration to some extent, care should be observed vegetables of exceeding merit are not excluded because of unfamiliarity the selection made too narrow. For example, such crops as cabbage, coll kohl-rabi, kale and other crucifers closely related botanically and practi the same as far as food properties are concerned, may be given undue dominance over other crops. This does not imply demerit for the veget named but would point to the desirability of greater variety.

If Irish potatoes are grown as an early or truck crop elsewhere on the it would not be wise to grow them in the garden at the same time. Prov might well be made later, however, for a few rows of second or fall crop tatoes. If Irish potatoes are not grown as an early farm crop they may be place among the early garden crops. A few rows of sweet potatoes shou included in the garden planting, especially when not grown elsewhere.

Such crops as beets, cabbage, carrots, celery, parsnips, potatoes, salsify turnips merit attention not only because of their value as fresh vegetables also because they may be kept in pit or cellar storage for use beyond outdoor season. These and other crops, that can be stored or conserv some manner, recommend themselves.

SOIL MANAGEMENT

It is often possible to select land that will require very little special p ration. On the other hand, it may be necessary to accept an undesirabl and handle it so that its condition will be improved. It is usually surpr to note the improvement that can be made in the course of a year. Drai soil preparation, and improving the texture of the soil are important phas soil management.

DRAINAGE

Good drainage is absolutely necessary for a satisfactory garden, for tables cannot thrive in a water-logged soil. If the garden plot does not natural drainage, provision must be made to drain it. There are very garden soils that are not improved by some type of drainage. While l clays are most improved by this practice, sandy soils having a clay su are made warmer and are greatly benefited by having the excess soil removed quickly.

essive surface water may be carried off by surface ditches. Surface
ge is frequently secured by use of beds raised above the level of the
l but really effective drainage must be underground and tile drains are
y the most satisfactory. Practically no form of intensive truck farm-
mploying overhead irrigation, is attempted on land that is not tile-
d.

ay not be necessary to tile drain all gardens to secure maximum results,
ith soils that are inclined to be cold and heavy, a system of drains will
ly remedy this condition. In addition to freeing the soil of an excess
er, tile drainage is valuable in rendering plant food available, admitting
the plant roots, and causing the soil to become mellow and to warm up
in the spring. If the garden plot is located on a slight slope, there will
difficulty in securing good drainage. If the ground is nearly level, the
tch should be dug deeper at the outlet than at its source so that rapid
ge will be provided. The tile will give good results if a fall of three to
nches in a 100 feet is secured and the outlets are kept open and free
ny obstructions.

PREPARATION OF THE SOIL

garden soil, if properly prepared, is handled with ease and satisfaction
hout the entire season, while a poorly prepared soil is laborious to work,
sually does not produce a satisfactory garden. It is important to em-
e the necessity of careful work in producing a finely prepared seed bed,
will cause a rapid germination of seeds and which will retain moisture
the growing period.

first step in preparing the garden plot consists in the removal of all
h including the remains of previous crops. If disease has not been
s in the garden during the previous year the plant remains may be com-
, otherwise it is safer to burn them. The actual preparation begins with
g. This operation should be carefully done. Too many gardens are
ssly plowed; the plowman attempts to turn a wider furrow with the
than is possible with the result that only a portion of the soil is turned,
are left between the furrow and often it is difficult to put the plot in
ctory condition by later tillage.

ough a deep seed bed is desirable, it is not advisable to break deeply a
hat has always received shallow plowing. Such soil should be deepened
dually increasing the depth of plowing for a few years until the desired
is attained. Some gardeners follow the practice of thoroughly disking
nd before plowing, so that when it is turned by the plow, the bottom soil
e fine and mellow.

y soils should be plowed in the fall to be put in the best condition. Fall-
d soils are left unharrowed and in the rough so that rains may soak in
easily and settle the subsoil below. In addition, the surface soil becomes
lated under the influence of alternate freezing and thawing, sun and
Such land may be worked earlier in the spring because of its dryer and
flocculant condition. In parts of the state where there is not sufficient
to mellow the soil, this process can be accomplished by means of fre-
cultivations in order that the air may act upon the soil particles. Sandy
and soils of high humus content may be plowed in the spring but the

work should be done early in order that the soil may settle before much garden is planted. When land is plowed in the spring, it should be dragged, and harrowed until it is thoroughly pulverized, presenting a s and even surface. Such a practice greatly lessens the work of later c tion.

The soil should not be plowed when wet, if the gardener is to avoid diffi later on. This is especially true if the soil is one of the heavier types. T no hard and fast rule as to when soil is dry enough to work. The simp of squeezing some freshly turned soil in the hand is about as reliable a It is dry enough to work if the lump of soil, when released, crumbles with but little pressure and little of the soil sticks to the hand.

Subsoiling will help greatly in making the soil deeper and in enabli surface soil to drain and become mellow and workable. Subsoiling cons loosening the subsoil without turning it up to the surface. A subsoil p a single shovel may follow in the furrow behind the turning plow, thus ing the subsoil which is covered when the next furrow is turned. Subs preferably, should be done in the fall.

Much time and labor will be saved by disking and harrowing thor before planting the garden. If the soil is lumpy, it may be necessary a clod crusher. For smoothing the surface and filling in depressions, made of planks, will be found valuable. The importance of smoothi pulverizing the soil before planting cannot be too strongly emphasized, this work is well wone, the labor of caring for the garden will be lessened.

IMPROVING THE CONDITION OF THE SOIL

The condition or texture of the soil is one of the most important fac gardening. It is desirable that the soil of the garden plot be as deep light and mellow as possible. Generally, deep plowing, the applicat humus, either in the form of manure or a green manure crop, and th tillage will improve the physical condition and increase the fertility of all soils.

If the soil is a natural loam, good texture can generally be secured b ing, disking, and harrowing. Where the soil is of the heavy type, add steps are often necessary. Such soils are improved by turning under applications of stable manure, green manure crops, by the addition o sand, by the use of lime, and the employment of tile drains. It often h that sandy soils are too open in texture and that they do not retain m or fertility. The use of stable manure, green crops, and the addition assist greatly in overcoming this condition.

Wood ashes are useful in lightening a heavy soil. The lime in them to correct acidity and to promote the important chemical process of ni tion.

THE USE OF LIME

Experience teaches that lime may be used with profit on practically a in the eastern part of the state, and on many of those in the Piedmo Mountain sections. On gardens which are acid or when green manure are turned under, ground limestone at the rate of two or three tons pe every three years is recommended. If lime is applied at the same time

re or mixed fertilizer is put on the ground, it will cause the loss of nitro- For this reason, lime is best applied in the fall.

ny gardeners question the advisability of applying lime to the soil before oes, believing that lime encourages the potatoes to be "scabby," and they t apply lime that year to the portion of the garden set aside for pota- Potato scab is a germ disease, but if the disease is present in the soil introduced by the seed, large amounts of lime may bring about a condi- nore favorable to the development of the disease. It is always advisable at seed potatoes wtih a disinfectant to prevent the introduction of scab he garden soil.

MANURES AND FERTILIZERS

rden soils are cropped so intensively that it is generally necessary to sup- rtility and humus to secure the best results. Garden crops respond more y and economically to fertilization than do other crops.

STABLE MANURE

ble manure is the best general fertilizer for garden soils because it not adds fertility but improves the physical condition of both heavy and light by supplying humus. One of the most important problems of the gardener keeping up of the supply of organic matter or the humus content. This pecially true in the eastern part of the state where the garden can be ed almost the year round. Although the soil may contain an abundance nt food, it will not produce maximum crops unless it contains a supply caying organic matter. In close-grained, sticky soils, which have a tend- to bake, humus produces a loose texture and increases the moisture ng ability of the soil. On loose soil it brings the grains closer together romotes chemical activity.

stable manure is used fresh, it should be applied and turned under in all or early winter, but if well-rotted, it may be used in the spring. The of ten to twenty tons per acre is not excessive.

GREEN MANURE CROPS

een manuring crops may be profitably used to supply fertility and to im- the condition of the soil when stable manure is not available. In this both leguminous and non-leguminous crops are at hand for this purpose. eguminous crops, such as cowpeas, soybeans, vetch, bur clover, and crim- lover, obtain nitrogen from the air and increase the nitrogen supply of oil when they are plowed under. Rye, a non-leguminous crop, when d under improves the physical condition of the soil by supplying humus. so far as possible, green manuring crops should be grown for the improve- of the soil on all parts of the garden which are to be idle for a time. never an area is to be idle for as much as six weeks in summer, it should anted to some quick-growing legume to be turned under for green manure. becoming idle in June or July may be sown to cowpeas or soybeans, n may be turned under in early fall in time to use the land for fall garden . Land becoming free of garden crops from August to October can be ed with vetch and crimson clover to be turned under in very early spring.

In parts of North Carolina, where the garden can be cropped almost tinuously, it is advisable to have it sufficiently large that a portion of it c planted to green manuring crops each year.

Green manure crops prevent waste of fertility and may increase the am of plant food in the surface soil where shallow rooted vegetables can u They also keep the soil in good condition, preventing it from baking d dry periods and from washing during rainy spells.

COMMERCIAL FERTILIZERS

Commercial fertilizers can be used to an advantage in practically all dens, especially where stable manure is not available. Even when s manure has been secured and worked into the soil, it is well to supplem with a moderate amount of commercial fertilizer in order to give a good to the plants and to hasten maturity. The kind and amount of fertilizer used by different gardeners will vary with the location and the natural c tion under which plant food material is supplied.

Ordinarily the lighter sandy soils of the Coastal Plain part of the state more potash and less phosphoric acid than do the heavy types found i Piedmont and Mountain parts of the state.

Generally speaking, with the exception of the soils high in organic ter, nitrogen is the constituent that is most frequently needed for gro satisfactory gardens. Next in importance is potash, lime, and phosphoric in the order named.

In the Piedmont section garden soils are most deficient in nitrogen and phoric acid and generally respond to a fertilizer containing these elem The amount of nitrogen is usually very small but varies with the amou organic matter in the soil. Nearly all Piedmont soils are comparatively in phosphoric acid but fairly high in potash. The use of lime will pro not give as striking results as in the Coastal Plain.

The requirements of mountain soils are similar to those of the Pied Mountain soils are high in potash, low in phosphoric acid, and contain a amount of lime. The nitrogen content varies with the amount of organic ter present. Commercial fertilizers for gardens should be relatively hi phosphoric acid and nitrogen. Only a small amount of potash should be Lime in some instances will prove desirable.

When commercial fertilizers are used, it is not practicable to use diff formulas with specific crops, but a general garden fertilizer should be ployed. In garden culture the question of the proportion of the food ele in a fertilizer is not so important as is that of the abundance.

As a general garden fertilizer for the Coastal Plain, a mixture analyz per cent nitrogen, 7 per cent phosphoric acid, and 5 per cent potash is re mended.

For Piedmont soils, a fertilizer analyzing 4 per cent nitrogen, 7 per phosphoric acid, and 4 per cent potash will give satisfactory results.

For the Mountain section of the state, a general garden fertilizer anal 4 per cent nitrogen, 8 per cent phosphoric acid, and 3 per cent potash is re mended.

However, one must realize that each garden soil is a problem in itself needs of which will be determined by the gardener through actual experi

inite rule can be given for the quantity of fertilizer to be applied, as this with the fertility of the land and its physical condition. In most in- s it will be found advisable to make an application of from 1,000 to pounds per acre, broadcasted. If a smaller amount is used, apply in the few days before planting the garden.

hould be borne in mind that commercial fertilizers will not continue to ce satisfactory results unless the soil is well supplied with humus. The fertilizers alone, without the addition of vegetable matter, will soon leave nd in an impoverished and unproductive condition.

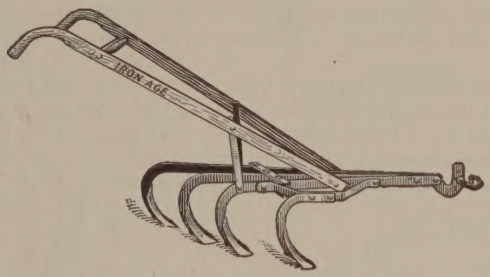

FIG. 3—Type of horse-cultivator.

ome cases, applications of nitrate of soda or sulphate of ammonia may ed to advantage as a top-dressing on such vegetables as lettuce, cab- spinach and other crops of this type when they seem to have slowed up wth. Some garden soils may have become too rich in nitrogen and are anced so that potatoes, tomatoes, peas, beans and certain other vegetables a rank top growth but fail to produce a satisfactory crop. The addition h phosphoric acid and potash may prove of value in inducing the plants ke tubers, fruits or seeds, as the case may be.

TILLAGE OF THE GARDEN

age is one of the most important factors in determining the success of a n. It is an operation that often becomes drudgery, especially in hot sum- If a satisfactory garden is to be secured, the vegetables must be care- tended during the entire season. It cannot be too strongly emphasized tillage must be thorough and timely for satisfactory results. Much d, seed and labor are wasted each year because many persons get the ning "fever" each spring but lose their interest when warm weather

importance of tillage is threefold, it keeps weeds in check, so that they t seriously compete with the vegetables for food and moisture, it prevents pid evaporation of moisture and it renders plant food available. Thor- tillage forms a shallow layer of dust like soil over the surface of the n at all times. It is not necessary to have a mulch deeper than 2 inches, re is no need for deep cultivation during the growing period.

In a large degree, the value of tillage lies in its timeliness. The follo general recommendations of when to till will be used by the succes gardener:

1. Till just before planting.
2. Till immediately after planting.
3. Till once a week or every ten days, if soil conditions permit.
4. Till as soon as possible after each rain.

The conservation of soil moisture is one of the most important roles of lage. The moisture in the soil around plants is rapidly exhausted by evap tion from the leaves. As long as the ground contains an average water sup a steady flow of moisture goes upward through the minute spaces betw the soil particles. When there is a lack of rainfall, the moisture in the lo soil becomes exhausted and surface soil is not supplied, which causes plants to suffer.

Usually as soon as a rain is over, evaporation from the soil begins. water that has just soaked in comes up through the soil and evaporates f the surface into the air. A crust forming over the soil after a rain is ducive to this condition. A mulch of finely divided soil, or a "dust mu prevents the loss of moisture through evaporation.

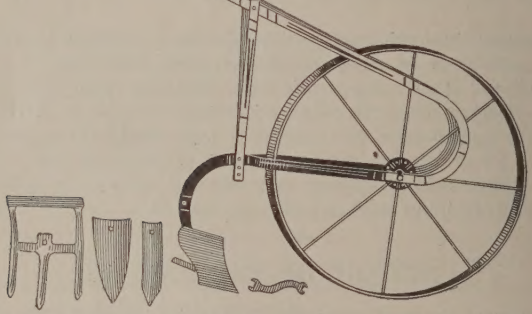

Fig. 4—The wheel hoe has many uses in the garden.

Weeds should be destroyed just after the seeds germinate. Tillage at in vals of a few days before planting makes weed control after planting m easier.

Sandy soils can be worked much sooner than clay soils after a rain. usual test of squeezing a handful of soil can be employed to determine if soil is dry enough for tillage. With soils of a heavier nature, such as the types, tillage must not be attempted while they are wet. Working a he soil when it is too wet causes the soil particles to cement together in c which are very difficult to pulverize.

Never get behind with the tillage work. When the soil becomes hard weeds get a start, garden work becomes very tiresome and uninteresting. D forget that tillage will be easier to accomplish, if the previous preparation been carefully and intelligently done.

n gardens should be arranged so that the rows run lengthwise and the hould be sufficiently far apart for the use of horse-drawn tillage imple- Much of the drudgery of tillage is obviated if the garden is planned rse tillage; all farm gardens should be so handled. Even where horse is used, a wheel hoe will be found to be a great time saver. In some

Hand tools for the farm garden. From left to right they are: Potato fork, spading fork, hand cultivator, mattock, hoe.

ces it will be necessary to supplement both horse and wheel tillage and hoeing and weeding.

es of tools for tilling the farm garden are discussed under the heading ls for the Garden.

TOOLS FOR THE FARM GARDEN

plows, harrows and cultivators usually to be found in the equipment North Carolina farms will prove as useful in the preparation and care garden as in the general crops, cotton, corn and tobacco; more especially the area is large and speed in tillage is imperative. Since there must es be some hand work in any garden, a spading fork, a spade, steel- d rake, and a trowel should be provided.

THE NORTH CAROLINA GARDEN PUBLICATIONS

The need for gardening information is indicated both by the num and type of farm and town gardens and by the many and varied inqui received regarding the different phases of garden culture.

The town and farm gardens of North Carolina, while closely rela in principal objects and general methods, have problems in the execut of methods and the achievement of objects that are peculiarly differe In presenting the information on gardening in the following publicatio these common relationships and differences are recognized and made bases for the division of material to best serve the needs of each t of garden.

Hence, the circular intended especially for the home gardener will of little interest to the farm gardener and *vice versa*. The manual composed of general information with application to the needs of b types of gardeners and it is best employed in conjunction with either the other publications.

Extension Circular 121. The Home Garden.

The typical home garden, within the conception and intention of t circular of garden information, is characterized by limited area, cl plantings, consistent hand work, and with the recreational feature ess tially important. Methods are relatively intensive, with large and re lar yields from a comparatively small area the main object.

Extension Circular 122. The Farm and Home Garden Manual.

The production of vegetables is the common object of both the fa and home garden. Fundamental principles and information deali with the nature and culture of vegetables, their climatic requiremen storage, and certain other considerations, have equal application to b types. The manual presents this general material in a readily accessi form.

Extension Circular 123. The Farm Garden.

The farm garden is an important department in the farm econo The methods employed are extensive as opposed to intensive. Relativ unlimited area, wide plantings, and more horse work conspicuou feature the situation. Recreational objects are generally negligible.